WHAT IS CLAIMED IS:

1. A method for the estimation of mean production for assemble-to-order manufacturing operations, the method comprising the steps of:

receiving an identification of a product to be analyzed;

receiving data describing the components required to produce the specified product;

formulating a sum of multidimensional integrals corresponding to the estimation of mean production for the specified product; and

evaluating the sum of multidimensional integrals.

2. A method as recited in claim 1 that further comprises the step of presenting the result of the evaluating step to a user.

3. A method as recited in claim 1 that further comprises the step of determining a feasible region Ω and an infeasible region $\overline{\Omega}$, the feasible including all points where the demand for the specified products can be met with the current levels of the components required to produce the specified product, the infeasible region including all points where the demand for the specified products cannot be met with the current levels of the components required to produce the specified product.

4. A method as recited in claim 3 that further comprises the step of formulating respective production policies $q(x)$ for the feasible region and the infeasible region.

5. A method as recited in claim 4 wherein the production policy for the feasible region is $q(x) = x$ and the production policy for the infeasible region is the uniform production policy.

6. A method as recited in claim 4 wherein the production policy for the feasible region is $q(x) = x$ and the production policy for the infeasible region is the local u-production policy.

7. A data storage medium having machine-readable code stored thereon, the machine-readable code comprising instructions executable by an array of logic elements, the instructions defining a method comprising the steps of:

receiving an identification of a product to be analyzed;

receiving data describing the components required to produce the specified product;

formulating a sum of multidimensional integrals corresponding to the estimation of mean production for the specified product; and

evaluating the sum of multidimensional integrals.

8. A data storage medium as recited in claim 7 wherein the method further comprises the step of presenting the result of the evaluating step to a user.

9. A data storage medium as recited in claim 7 wherein the method further comprises the step of determining a feasible region Ω and an infeasible region $\overline{\Omega}$, the feasible including all points where the demand for the specified products can be met with the current levels of the components required to produce the specified product, the infeasible region including all points where the demand for the specified products cannot be met with the current levels of the components required to produce the specified product.

10. A data storage medium as recited in claim 9 wherein the method further comprises the step of formulating respective production policies $q(x)$ for the feasible region and the infeasible region.

11. A data storage medium as recited in claim 10 wherein the production policy for the feasible region is $q(x) = x$ and the production policy for the infeasible region is the uniform production policy.

12. A data storage medium as recited in claim 10 wherein the production policy for the feasible region is $q(x) = x$ and the production policy for the infeasible region is the local u-production policy.

13. A system for the estimation of mean production for assemble-to-order manufacturing operations, the method comprising the steps of:

means for receiving an identification of a product to be analyzed;

means for receiving data describing the components required to produce the specified product;

means for formulating a sum of multidimensional integrals corresponding to the estimation of mean production for the specified product; and

means for evaluating the sum of multidimensional integrals.

14. A system as recited in claim 13 that further comprises means for presenting the result of the evaluating step to a user.

15. A system as recited in claim 13 that further comprises means for determining a feasible region Ω and an infeasible region $\overline{\Omega}$, the feasible including all points where the demand for the specified products can be met with the current levels of the components required to produce the specified product, the infeasible region including all points where the demand for the specified products cannot be met with the current levels of the components required to produce the specified product.

16. A system as recited in claim 15 that further comprises means for formulating respective production policies $q(x)$ for the feasible region and the infeasible region.

17. A system as recited in claim 15 wherein the production policy for the feasible region is $q(x) = x$ and the production policy for the infeasible region is the uniform production policy.

18. A system as recited in claim 15 wherein the production policy for the feasible region is $q(x) = x$ and the production policy for the infeasible region is the local u-production policy.